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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,616

05/25/2005

Migaku Takahashi

YIPO:002

7845

37013 7590 05/27/2009
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EXAMINER

BASHORE, ALAIN L

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

05/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,616	Applicant(s) TAKAHASHI ET AL.	
	Examiner Alain L. Bashore	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. A certified English translation of the foreign priority document has been received. The effective filing date of the present application is hereby perfected to 3-29-02.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6, 8-9, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over [Gill ('121) and Japanese patent publication JP 2002-25032 (JP '032)] in view of Abarra et al article entitled "Longitudinal magnetic recording media with thermal stabilization layers" (Abarra et al article).

Gill discloses a method of producing an MR sensor comprising a step of forming successively a nonmagnetic substrate, a metal underlayer and a ferromagnetic metal layer in a multilayer wherein the step of forming said ferromagnetic metal layer is a step

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of forming alternately a plurality of ferromagnetic films and one or more nonmagnetic metal spacer layer or layers in a multilayer, and comprising a step of allowing at least the interface of said nonmagnetic metal spacer layer or layers to adsorb physically oxygen and/or nitrogen (see fig 12; abstract).

Gill does not disclose allowing at least the interface of said nonmagnetic metal spacer layer or layers to adsorb physically oxygen and/or nitrogen, or a mixed gas.

JP '032 discloses allowing layer or layers to adsorb physically oxygen and/or nitrogen, or a mixed gas, further wherein the gas is a mixed gas obtained by mixing oxygen or nitrogen with Ar or other rare gases (para 0071).

It would have been obvious to one with ordinary skill in the art to utilize allowing at least the interface of said nonmagnetic metal spacer layer or layers to adsorb physically oxygen and/or nitrogen, or a mixed gas for the purpose of enhanced Signal to noise ratio characteristics.

It is noted that a magnetic recording medium is recited in the preamble, but no further recitation is provided in the body of the claims.

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It would have been obvious to one with ordinary skill in the art to utilize the steps for a magnetic recording material because the Abarra et al article teaches need for improved SNR.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over [Gill ('121) and Japanese patent publication JP 2002-25032 (JP '032)] in view of Abarra et al article as disclosed above and further in view of Schneemeyer et al ('392).

Tsuchiya et al in view of Abarra et al article does not describe partial pressure of oxygen at the specific pressure ranges recited.

Schneemeyer et al discloses partial pressure of oxygen for coating methods (col 6, lines 34-47).

It would have been obvious to one with ordinary skill in the art to include partial pressure of oxygen at the specific pressure ranges recited because Schneemeyer et al teaches deposition condition variables (col 6, lines 34-47) in absence of criticality of result.

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5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over [Gill ('121) and Japanese patent publication JP 2002-25032 (JP '032)] in view of Abarra et al article as disclosed above and further in view of Hartsough ('385).

Tsuchiya et al and the Abarra et al article does not describe exposure to oxygen at 10 Langmuir or more.

Hartsough discloses exposure to oxygen at 10 Langmuir or more (col 6, lines 44-46)

It would have been obvious to one with ordinary skill in the art to include exposure to oxygen at 10 Langmuir or more because Hartsough teaches reaction kinetics desirability (col 6, lines 30-50).

Response to Arguments

6. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection. The reference to Tsuchiya has been removed as prior art with the perfection of the priority document.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alain L. Bashore/
Primary Examiner, Art Unit 1792